

REMARKS

Applicant has carefully considered the Office Action dated September 27, 2006 and the references cited therein. Applicant provides this response in a sincere effort to place the application in condition for allowance. Accordingly, reconsideration is respectfully requested.

Claims 1-4, having been withdrawn in response to an election requirement, are cancelled by this amendment. Therefore, Claims 5-7 are presented for consideration.

In the Office Action, the Examiner has objected to the title as not being descriptive of the invention. Accordingly, Applicant has amended the title in order to address the Examiner's objection.

Applicant has also amended paragraph 26 of the Specification to correct a reference numeral informality.

Claims 5-7 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner contends that with respect to Claim 5, the phrase "metalized layer is deposited simultaneously", is vague and indefinite. The Examiner is unclear how the metallization is performed simultaneously since the specification describes electroplating following laser activation. The Examiner has requested clarification.

Applicant respectfully traverses this rejection and submits that the claim clearly describes the invention. Claim 5 states that "a metalized layer is deposited simultaneously on the metallization pattern and on the uncovered areas." As set forth in the specification, the

laser beam activation occurs first thereby forming patterns, then the metallization patterns and uncovered areas receive the metalized layer at the same time. (Paragraphs 32 and 33.) The metallization process step, which takes place after the laser beam activation, is performed simultaneously on both the uncovered areas of a first plastic material and the laser beam activated areas of a second plastic material. Accordingly, Applicant respectfully submits that Claim 5 complies with 35 U.S.C. § 112, second paragraph.

The Examiner has rejected Claim 6 for including the phrase “or the like.” Applicant notes that Claim 6 does not include such language.

Claim 7 has been rejected for including terms referring to different materials, and the Examiner contends that it is vague and indefinite. Applicant respectfully submits that the terms used in Claim 7 are the ordinary terms used for the various plastic materials. The materials can be obtained from different plastic manufactures based on these terms. Product description sheets referencing the materials defined in the claims are being filed herewith in order to show that the terms used in Claim 7 are referring to commercially-available materials using their ordinary descriptions. This new information is cited in a Supplemental Information Disclosure Statement filed herewith. Applicant further notes that the material PPMID and PBTMID are found in reference to figure 11 of the previously cited Huske, et al. article.

Claims 5-7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 01/97583, GB 2193847 or GB 2266410 (collectively referred to herein as “the primary references”) in combination with Huske, et al. In the '583 reference, a molded electronic

assembly is disclosed which includes two different molded plastic portions. One of the molded portions is able to be metal plated while the other portion is not plateable. Page 10, lines 26-33. The non-plateable layer or material acts as a mask for the formation of conductive traces on the first substrate portion. Page 11, lines 13-17.

The '847 reference discloses a process for forming a plastic article with a metallic pattern on its surface including forming at least a first insulating shape and a second insulating shape surrounding the first shape and having exposed on its surface predetermined areas of the first shape. The first shape is able to be metallized and the second insulating shape is not. Only the exposed areas of the first shape can be metallized. Accordingly, the second insulating shape acts generally as a mask made of a material that is non-metallizable. Lines 59-74.

The '410 reference teaches including a first layer which is able to be plated, and a second layer having openings formed thereon. The second layer is not plated. Conductive traces are formed in the first layer at the openings of the second layer. Figure 2. The second layer, therefore, acts as a mask preventing conductive traces to be formed thereon.

The Examiner admits that each of the above-identified references fails to teach a laser beam activation prior to metallization of a substrate. For this teaching, the Examiner relies on the Huske reference. Huske teaches a layer which may be treated by a laser in order to make the laser treatment area susceptible to electroplating. According to the Examiner, it would have been obvious to one skilled in the art to modify the references in order to use a

laser activation treatment prior to metallization in order to obtain the benefits associated therewith.

Applicant respectfully traverses the rejection based on obviousness. There is no teaching in the cited references or the prior art to combine the cite references as in the Office Action. The references also fail to teach each and every limitation of the claimed invention.

In the present invention, a substrate body includes two components that are molded together. One component includes a first substrate formed of a first material that is able to be metallized in a conventional manner. The other component includes a second substrate formed of a second material that is not able to be metallized without first being activated by a laser beam. The laser activated portions may be metallized. The resulting substrate body includes areas of the first material that are uncovered and areas covered by the second laser activatable material. Accordingly, the present invention uses material which is both able to metallized in a traditional manner and that which can only be metallized after it has been activated by a laser beam. Applicant respectfully submits that the use of both materials and metallizing techniques in forming a conductor carrying means are not taught or suggested by the prior art. Applicant further submits that the cited art does not teach or suggest the simultaneous metallization of both a material that is metallizable and a material which has portions activated by a laser to be metallizable.

In the cited primary references, the substrate includes multiple layers with one being a masking layer. The masking layer is not able to be metallized and partially covers a layer which can be metallized. Therefore, metal electrical traces are created by leaving openings in

the mask such that the exposed areas may form the desired conductive traces. The mask components cannot be metallized and are specifically chosen not to be metallized. In contrast, a substrate which is laser activated may be metallized on any portion after it has been activated by a laser, such as taught in Huske, is very different than the layers described in the cited primary references.. The layer itself becomes able to accept metal, it is not simply covering a metallizable layer and having openings therein.

There is no teaching in any of the cited references to use a laser beam activatable second material in combination with a metallizable first material for forming a molded conductor carry means. Furthermore, one skilled in the art reviewing the cited primary references would not be taught to use a layer which can be metallized along with a layer that is laser activated to be metallized. The prior art use of non-metallizable masking layers, in fact, teaches away from using the method of Huske, since the masking layers are deliberately chosen to be non-metallizable. There is no teaching to permit the masking layer to at some point receive a metallized layer.

The cited Huske reference also does not provide such a teaching. Huske specifically teaches a component which may be metallized after being subjected to a laser. However, in the process taught in Huske, there is no teaching to combine this technique with materials which do not require laser activation before receiving a metal layer. In Huske, the teaching is limited to using the laser activated layer in order to form all of the necessary traces to be metallized. Huske does not teach that there would be any advantage in combining its

technique with the technique of the cited primary references. One reviewing Huske would simply use laser activation to create all the required traces.

The present invention defined in Claim 5, includes a method for forming an injected molded conductor carry means including both uncovered substrate portions which are metallizable and those which are metallizable after laser activation. It is, therefore, possible to create on one substrate body large conductive areas using the exposed metallizable material on the first substrate and fine structured conductive paths formed by the laser beam on the second substrate. These conductive areas may be joined and merged to generate metallized portions which are continuous over both substrates. Therefore, a conductor carrying means both complex and having fine details in the conductors may be efficiently produced.

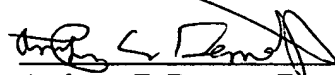
In addition, there is no teaching in any of the cited references to simultaneously expose a metallizable first material and a laser beam activated second material to a metallization step for forming a molded conductor carry means. Therefore in one step the metallization process is completed, which allows for the efficient production of conductor carrying means. Since the proposed combination fails to teach this element of the claim, the combination does not render the claim obvious.

Accordingly, Applicant respectfully submits that the teachings of the cited art would not be combinable by one skilled in the art and that such references failed to teach or suggest the claimed invention. Therefore, Applicant respectfully submits that Claim 5, and those claims pending therefrom, patentably distinguish over the references of record.

Applicant: Stephan Schauz
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If the Examiner believes that a telephone interview would be helpful in moving this case towards allowance, he is respectfully invited to contact the Applicant's attorney at the number set forth below.

Respectfully submitted,



Anthony E. Bennett, Esq.
Registration No.: 40,910
Attorney for Applicant

HOFFMANN & BARON, LLP
6900 Jericho Turnpike
Syosset, New York 11791
(516) 822-3550
AEB:sbs:mf
230893_1